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Salivary composition of selected age groups of captive Asian elephants at Pinnawala Elephant Orphanage, Sri Lanka

Wijesingha H.M.N.P., Sudarshani K.A.M.* and Wegiriya H.C.E.

Department of Zoology, University of Ruhuna, Matara, Sri Lanka

The salivary composition of Sri Lankan elephants has not been thoroughly investigated. The present study aimed to determine the salivary composition of captive Asian elephants at the Pinnawala elephant orphanage (PEO), Sri Lanka from March to September 2017. The biochemical, physical and chemical parameters of saliva and variation of salivary composition among five study groups of captive elephants, namely, Group 1 (Pregnant, n= 6), Group 2, (Supplementary milk feeding, 00-05 yrs., n= 3); Group 3 (age 05-15yrs., n= 6), Group 4 (age 16-30 yrs., n=6), and Group 5 (above 30 years of age, n= 3) were analyzed. Saliva samples (approx. 2.5 ml) were collected from each elephant using a sponge before and after the feeding. Samples were pooled according to the group, centrifuged and used for analysis. Variations of salivary composition namely, percentages of salivary enzymes, trace materials, cations and anions in salivary samples of study groups were compared and analysed using the standard analytical methods in the laboratory. Results showed that salivary components such as amylase, ammonia and phosphates were not varied according to their feeding time or age, however mucin is present only in 16-30 year age group. Other salivary components such as urea, glucose, chlorides, sulphates, calcium, magnesium and sodium were varied with their feeding time or age. Pregnant group had relatively low creatinine level which was 25% less than the other groups. During this study two types of microbes were observed twice in salivary samples of Group 1 and 2. The present study provides baseline information on salivary composition of captive elephants in PEO, Sri Lanka.

Keywords: Captive Sri Lankan elephants, Pinnawala elephant orphanage, salivary composition

*Corresponding Author: mangalas@zoo.ruh.ac.lk